

CANCER OF THE HEAD AND NECK

Management of Lesions with Borderline Operability and Curability *

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Early, localized, readily accessible cancer is curable. Late, extensive, inaccessible, and metastatic neoplasms are inoperable and incurable. Modern oncologic methods permit active treatment of lesions which were formerly considered hopeless. Remarkable advances have been made in diagnostic, radiotherapeutic and electrosurgical technics. It is now possible to prolong life, relieve suffering and even cure patients who were formerly classed as doomed.

Improvements in Diagnosis

Biopsy is now almost universally employed as the first step in the diagnosis of cancer, whenever the neoplasm is at all accessible. Routine physical, serologic and radiographic examinations with appraisal of the onset, rate of growth, location and probable extent of the lesion should permit an accurate diagnosis of type and grade of malignancy in approximately two-thirds of all cases of cancer.¹ Efficiency in diagnosis is increased, however, to more than ninety per cent accuracy if biopsy can be done and the surgical pathology of the growth correctly evaluated. Practical oncologists stress the value of microscopic diagnosis and control of treatment in all cases where the study is at all feasible. Radiologists as well as surgeons recognize the importance of pathology in its revelation of the life history of the growth as of paramount value in the control of treatment. Radiologists, in particular, are gradually losing their fear of biopsy. Electrosurgical biopsy² is widely employed as a safe and satisfactory technic for the accomplishment of the following objectives:

1. Electrosurgical excisional biopsy for the total ablation of low grade localized readily accessible neoplasms.
2. Electrosurgical resection of the advancing edge of a cauliflower, ulcerated tumor, to determine the type and grade of the growth.
3. Electrosurgical resection of the major portion of an otherwise inoperable tumor, prior to the application of radium or x-rays. By this technic, not only is valuable information obtained as to the cellular components of the growth and its bed, but any infected material that may serve as a barrier is effectively removed.

While we consider electrosurgical biopsy as of most practical value from the standpoint of safety and efficiency, other methods should be employed when indicated. Biopsy by a sharp cutting instrument, knife, curet or punch technic gives excellent histologic material if the site is correctly chosen. There is little hazard of implantation, if the wound is cauterized or coagulated. Aspiration biopsy, through a large bore needle, has proven of some value. Frozen section biopsy has been so thoroughly established that it need be merely mentioned at this time. In every case, however, the final judgment as to the sur-

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gical pathology in question, should not rest upon one single slide, following a casual study of the gross specimen. Surgical pathology consists of much more than study of the removed specimen. The pathologist should be a clinician and understand the problems of the surgeon and radiologist. The clinicians should work in close cooperation with the laboratory. Such reciprocation as now obtains in the well organized oncologic clinic is necessary in the management of cancer with borderline operability and curability. It should be effective from the time the patient is first seen, with the initial diagnostic steps, including the biopsy. It should continue through the various therapeutic stages, as indicated by the nature of the lesion. Although either of the three stages may be omitted, the management of cancer with doubtful curability consists of preoperative radiation, operation with the aid of electrosurgical technic, and postoperative radiation. From time to time, follow up or "check" biopsies are of great importance in the advanced so-called incurable cases.

Plastic repair of the defect left after resection of cancer in the head and neck is better not begun until a follow-up biopsy proves negative. In the management of some cases of cancer, prior to the first biopsy, preoperative radiation may be advisable. In these cases the oncologist must make due allowance for the modified histologic character of the lesion due to prior radiation. Chronologic variations in grade and even type of cancer are met with from time to time. Mixed type growths³ are not infrequently seen, which explains failure of complete regression in some cases of borderline cancer that had previously been treated by either x-ray or radium or both. It is for the above reasons, largely, that modern oncologic treatment demands biopsy as the initial step in the management of all neoplasms accessible to electrosurgical technic. As a final argument in favor of routine biopsy study, it may be incontrovertibly stated that statistics as to cure of cancer are of little or no value, unless the diagnosis has been verified by the microscope.

Improvements in Radiation

Among the many advances in radiotherapy, the most outstanding are those based upon scientific correlation between histogenesis and radiation response.⁴ Modern radiotherapy is largely based upon surgical pathology of the growth. Combined methods of electrosurgery with radiation have proved of great value in the management of head and neck cancer with borderline curability. A caustic dose of radium is required for the cure of localized cancer of low grade anaplasia. Electrosurgical biopsy is recommended as a superior technic for this type of growth. Localized high grade neoplasms may also be treated by electrosurgery. The more extensive highly anaplastic tumors should never be denied the benefit of thorough irradiation. Mixed cell patterns of both low and high grade anaplasia, indicate the advisability of both surgery and radiation. We may conclude then, that the factor of radiation response must be evaluated in all neoplasms, including those of borderline curability. We should not conclude from these facts, however, that all cases of cancer of the head and neck, even those of borderline curability, should be relegated to the radiologist. The surgical pathologist should share responsibility with the radiologist, not only in evaluating the histogenesis of the growth, but also in contributing his share of the work required in the eradication of the neoplasm.⁵

Improvements in Operative Technic

Among the outstanding improvements in oncologic therapy has been the evolution of electrosurgery. The cardinal principle of complete extirpation

should be followed whenever at all possible. While it may be stated that electrosurgery is less likely to be followed by dissemination of the growth than classic operative technic, nevertheless an effort should be made to excise the neoplasm whenever possible. Not only should the line of excision pass through normal tissues paradjacent and subadjacent to the neoplasm, but also an appreciable part of the tumor bed should be removed. This cannot always be accomplished by electrosurgery with safety to important parenchymatous structures. In the head, we are limited in operating in the neighborhood of the cribriform plate and the pterygopalatine fossa. Similar limitations exist in the hypopharynx and along the great cervical vascular trunks. Complete ablation of metastatic cancer in the neck is impossible by any form of operative technic. This is notably true when the growth has originated in the mouth and has become widely disseminated along the deeper lymphatics. If the growth has remained localized in the upper cervical nodes, or in the submaxillary gland, the lesion may be considered of borderline operability and curability. Electrosurgical resection is occasionally curative in this situation. Prior ligation of larger blood vessels, preoperative and postoperative radiation, sequestrectomy and plastic repair are factors of equal importance to electrosurgery in the management of cancer of borderline curability. In extensive low grade neoplasms of the head and neck, tracheotomy and gastrostomy may also be required.

Eradication of cancer from the head and neck demands fortitude, and better than average knowledge of the surgical pathology and anatomy of this region. Irrespective of the technic employed, whether electrosurgery or classic operation, or a combination of both, the operator should endeavor to carry out the surgical axiom: "Do the adequate resection at the first operation." Ultraconservatism is fatal in the management of cancer. Whenever we are over-conservative at the first operation, we will be compelled to be just that much more radical under less favorable conditions in dealing with the inevitable recurrence. This is true, even when electrosurgery is employed on lesions that should have been readily cured at their early stage.

The management of cancer of the nasal accessory sinuses was discussed at a previous session of the Congress. The importance of radiation combined with surgery aided by electrosurgical technic was then emphasized and is now repeated. Our best results have been obtained in epidermoid cancer which had originated externally. Radioresistant basal celled cancer which had infiltrated the orbit and diploic tissue of the skull, was amenable to radical electrosurgical resection, but only in direct proportion to the depth of infiltration. Biopsy in such cases not infrequently shows basal-squamous cancer.³ This type cannot be differentiated clinically from ordinary rodent ulcer. It is much less likely to regress under radiation than ordinary basal celled cancer. For this reason, biopsy before radiation of epitheliomata about the orbit, nasolacrimal duct and nasofacial juncture, is important. Electrosurgical excision is curative in these lesions in almost every case.

Borderline Buccal Cancer.—The present trend in oncologic clinics is to avoid surgery in buccal cancer. Whether originating in the lip, buccal, alveolar or lingual mucosa it is most commonly squamous epithelioma in type. Buccal cancer varies in grade of malignancy in its various locations. When in its precancerous stage as papilloma or leukoplakia, and also in its early low grade localized stage, the growth is readily diagnosed and cured by electrosurgical excision. When located in the posterior third of the tongue, or when it has infiltrated through the floor of the mouth or into the hypopharynx, the operator will save himself and the patient much grief by employing radiation rather than surgery.

Radiation, in addition to electrosurgery should be employed in epi-

dermoid cancer of the upper jaw. Lesions in this situation which should be classed as of borderline curability are those which involve the posterior third of the alveolar arch with probable infiltration not only into the antrum but also the pterygopalatine fossa. Cancer may extend upward from this source into the ethmosphenoid cells and orbit. In such borderline cases, combined radiation and electrosurgery is occasionally successful. Since this type of cancer seldom metastasizes into the neck, and since upward extension is slow, early radical removal should be carried out, followed by the indicated radiation. The same may be said for epulis, and perhaps also for adenocarcinoma of the palate.

Cancer of the lower lip, predominant in males, is most often a low grade squamous celled epithelioma. Excellent results are being obtained by interstitial radiation; also by the Pfahler technic of electrocoagulation of the primary growth followed by fractional doses of x-ray to the cervical lymph nodes. Electrosurgical excision is curative for cancer of the lip in the very cases which are considered ideal for radium. The cosmetic end result is in most cases better after radiation. If the growth is still superficial to the orbicularis muscle, however, electrosurgical excision not only gives a positive cure, but the five year end results compare favorably with radiation, not only as to cure but also in a cosmetic sense. Generally speaking, the cosmetic factor is of secondary importance in the management of cancer. This is certainly true in buccal cancer which has extended into the neck.

In the management of metastatic cancer of the neck, the lesion should always be considered as of borderline curability if one or two firm nodes may be palpated in the submaxillary region, and when they are not firmly fixed. Preliminary biopsy should be done. Syphilis should be ruled out. Depending upon such factors as prior radiation, the decision is made as to immediate exploration of the neck under frozen section control or the use of further x-ray treatment to the neck. The primary growth should be resected by electrosurgery. Resection should be wide enough to produce a local cure, even though subsequent plastic repair will be required for closure. If the cervical mass can safely be resected by electrosurgery, the operation is curative in many cases. It is not wise to do extensive block dissection in the neck for epidermoid cancer originating in the mouth. If the cervical mass is malignant and resection proves impracticable, a radium capsule may be inserted and left within the wound, or interstitial radium may be employed.

Block dissection of the neck, with resection of the sternomastoid muscle and the internal jugular vein may be successfully employed for cervical extension of malignant growths that have arisen within a mixed tumor of the parotid gland. This lesion is classed as of borderline curability and treated by surgery for the following reasons: — (1) The onset of the malignancy is delayed, arising within an encapsulated tumor, from which extension is comparatively slow. (2) Tumors of the parotid gland are notoriously radio-resistant. (3) Recurrence may be successfully attacked should the first operation prove incomplete. It is re-emphasized that these factors do not apply to cervical metastasis of primary buccal cancer. Hence the inadvisability of extensive surgery in the attempted eradication of epidermoid metastatic cancer in the neck.

These observations are largely based upon my own experience in private and clinical practice during the past fifteen years. During this time the field of oncology has been in a state of progressive evolution and improvement. Combined methods of treatment and co-operative teamwork between the surgeon, pathologist and radiologist are now more widely and successfully employed. We are now able to control these borderline cases, where formerly they would have been referred by the surgeon to the radiologist, by the

radiologist to the electrosurgeon, and vice versa. Our records show an ever increasing number of five to ten years survival in patients, who, when first seen were classed as hopelessly incurable.

We are not as yet ready to quote statistics. Approximately fifty per cent of our borderline cases have survived five years. It is obvious that in approximately half the cases whom we endeavored to save from an otherwise hopeless condition, statistics could be quoted as "cured." Statistics as to "cure" of cancer are generally unreliable. As a matter of human interest, we can offer these combined methods of radiation and electrosurgery to patients with cancer of borderline curability, as a hopeful even though not optimistic plan of attack against an otherwise insurmountable situation. Many, but not all patients, when offered this "fifty-fifty" choice, courageously co-operate. Most patients derive some benefit from active treatment. With occasional exceptions, their septic ulcerated growths are sterilized, local recurrences are held in abeyance, and they are spared suffering and social ostracism that otherwise would have been inevitable.

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Discussion

Dr. Thomas C. Galloway (Evanston, Ill.): One cannot intelligently outline the treatment of these cases without knowing exactly their histologic picture. Biopsy of course has its limitation, but I think no one should treat carcinoma without knowing its histologic characteristics. If it is small, one can get a histologic report after its removal.

The indications and relative advantages of electrosurgery and radiotherapy are clear. I started out doing only electrosurgery because I had no adequate radiotherapeutic apparatus available, and one must bear in mind that there have been improvements in the technic of electrosurgery as there have been in radiotherapy. We have three main criteria. One is the histologic picture which Dr. Kime has so well discussed. If the tumor is of low grade malignancy, mature form, grade 1 or 2, the indication is for surgery. If it is anaplastic, if it is a grade 3 or 4, if it is a transitional cell carcinoma, or a lympho-epithelioma, then I think we should place our reliance on irradiation.

The location has a good deal to do with the virulence of the tumor because it probably is related to the parent cell from which the malignancy arises. I would give more of the skin cancers, the small skin cancers at least, to the radiotherapist because of better cosmetic results. Certain tumors I would not now subject to elec-

troscopy. Carcinoma of the tonsil is curable in 24 to 28 per cent of the cases by irradiation. I have cured one case by electrosurgery, but in the light of present experience I should never attempt another one. That includes also for transitional cell carcinoma, lympho-epithelioma of the nasopharynx, or hypopharynx. It applies to tumors of the base of the tongue. Tumors of the anterior third of the tongue, especially if they are of low grade malignancy, papillary or fungating, can be cured by electrosurgery. Tumors of the lip and cheek perhaps will require combined therapy. Certainly tumors of the antrum I think should have combined therapy. There are no better results available than those of about 38 per cent cures by combined therapy.

A word should be said about carcinoma of the larynx. The radiotherapist has discovered that by using proper fractional doses he can treat carcinoma of the larynx without very bad results. I do not think that from any statistical information we have it is justifiable to commit a small, movable, unfixed tumor of one cord of the anterior third, or both cords even, to radiation therapy when by laryngofissure, which is an eminently satisfactory operation, one can insure a good voice and a normal airway and cures ranging from 80 to 88 per cent.

Just a word about preoperative radia-

tion. I think there is seldom any indication for that, because one cannot carry a course of radiation therapy to its conclusion before operation. Now it is quite a different picture when radiation therapy has failed, because there are some cases which attain the brilliant results as Dr. Kime has shown with electrosurgery. Postoperative radiation we do not use, except perhaps in the antrum, unless we have definite evidence of recurrence. X-ray or radium should not be used in a careless or casual or in an inadequate manner, and unless one obtains a positive biopsy or signs of recurrence one is not going to give postoperative radiation therapy to the fullest satisfaction.

Dr. A. D. Willmoth (Louisville): There are two or three points to which I should like to call attention. One is thoroughness. If you cannot proceed radically with cancer, then don't attempt it. It does not make much difference about the cosmetic effect so long as the question of life is at stake. If you are going to regard the cosmetic factor too seriously, then you should not attempt electrosurgery.

The other thing is as the doctor just said, "Educate the public and educate many doctors who, unfortunately, tell them not to bother the tumor until the tumor bothers them." Breast cancer is sometimes seen early, and they will advise the woman to let it alone. You know

what that means, when she comes to the surgeon she has a metastasis into the arm pit and above the clavicle. Then comes that case for which nothing can be done. The type with most offensive odors. We have a simple measure to check this—sugar, preferably powdered sugar because it is not sharp and sandy like granulated sugar—and can be moistened to the consistency of paste and spread on a cloth as a dressing. One or two applications of sugar a day will keep the growth clean, and the hospital will not be objecting to the odor about the wards.

In vaginal cases I use just ordinary Karo syrup. I tell the patients to take a teacup to a quart of water and use it as a douche, and I keep these patients just as clean as any others I have in the hospital. It is the one way to keep these patients clean and without odor in their homes until death ends the scene.

Dr. Edwin N. Kime (closing): I have already used my closing time in the original discussion; therefore, I won't add anything more except to say that the paper as it will be published will discuss a number of these lesions about the floor of the mouth and the hypopharynx. I fully agree with Dr. Galloway that you will save yourself and your patients a great deal of anxiety if you will avoid those places with electrosurgery, especially if you have to open up the pharynx.